

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

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EXPLANATION

Slope may be defined as the deviation of the inclined ground surface from the horizontal, as measured in a vertical plane. The angle of slope measures the steepest gradient encountered on the ground surface.

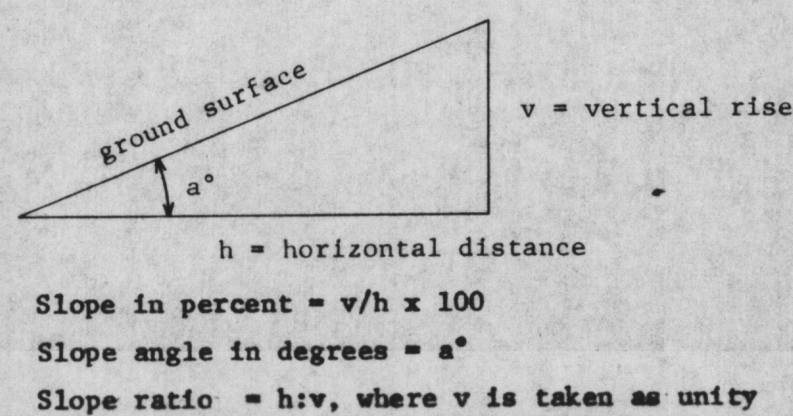
The generalized slope map summarizes the continuously variable slope information shown on a contour map by grouping areas of similar slope values into a single map unit. The slope map was constructed from the topographic map by measuring the contour densities. Greater detail and accuracy were added by examination of aerial photographs and by comparison with the geologic map units. The slope categories have been chosen as convenient percent figures. Corresponding values for slope angle in degrees, and slope ratio, are also given for each map unit. The relationship among these three systems for measuring slope is shown in the diagram below.

Within each slope-map unit there are slopes that do not fall within the assigned slope category because the ground surface is in detail more varied than can be portrayed at the scale of this map. In addition, the map has not been field checked extensively, and it can be expected that locally there are deviations of slope from the assigned category. Many of the boundaries shown on the map depict sharp breaks in slope, but others represent a gradual change in slope over a broad zone. The slope percentages for the map units are therefore approximate, but it is believed that the slope-percentage figures are accurate to within about 10 percent of their value.

MAP UNITS

Map Unit	Slope category	Description
1	Less than 5% Less than about 3° More than 20:1	<i>Very gentle slopes.</i> Principally on alluvial surfaces in channels formerly occupied by large streams; also includes parts of low terrace complex along Eagle River. Small terrace escarpments present locally, otherwise steeper slopes absent. Slopes present few problems to development.
2	5-15% About 3-8 1/2° 20:1-6.7:1	<i>Gentle slopes.</i> Principally areas underlain by glacial deposits that exhibit a gently rolling to slightly hummocky surface; also includes some small alluvial fans and low terraces along Eagle River where these contain several levels within a small area. Some small areas and some long and narrow areas of very gentle slope are present, as well as minor bands of steeper slope on some hillsides and terrace escarpments. Slopes may present minor grading problems.
3	15-25% About 8 1/2-14° 6.7:1-4:1	<i>Moderately gentle slopes.</i> Hummocky topography on glacial deposits in the lowland areas, and small areas high in the mountains. The hummocky topography includes areas of more gentle slope on hilltops and in depressions and other low-lying places, and small areas of steeper slope on some hillsides. The mountain slopes commonly change over a broad area to slopes of the next steeper unit. Slopes should be considered carefully in the design of any project.
4	25-45% About 14-24° 4:1-2.2:1	<i>Moderately steep slopes.</i> In the lowland includes unusually steep hills of glacial deposits and the more subdued escarpments bordering channels; intermediate slopes in the mountains, generally underlain by colluvium, with small areas of bedrock exposure. Small areas of both steeper and more gentle slopes included locally. Slopes pose significant problems to most types of development.
5	45-100% About 24-45° 2.2:1-1:1	<i>Steep slopes.</i> Long narrow escarpments along river and sea bluffs in the lowland; most of the mountain slopes, with bedrock commonly exposed. Small areas of both steeper and more gentle slopes included locally. Most types of development are difficult.
6	More than 100% 45-90° Less than 1:1	<i>Very steep slopes.</i> Small areas in the lowland where rivers are eroding their bluffs; major cliffs in the mountains. Glacial deposits and bedrock well exposed. Development of almost any kind is precluded.

Diagrammatic representation of slope-measuring terms



Base from U.S. Geological Survey
Anchorage (B-7) Alaska

GENERALIZED SLOPE MAP OF THE EAGLE RIVER-BIRCHWOOD AREA, GREATER ANCHORAGE AREA, BOROUGH, ALASKA

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U.S. Geological Survey
OPEN FILE REPORT
This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards.